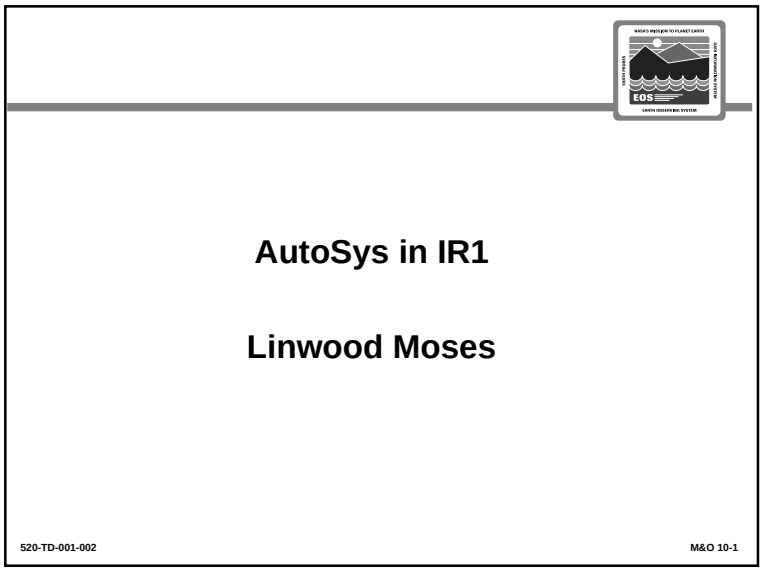
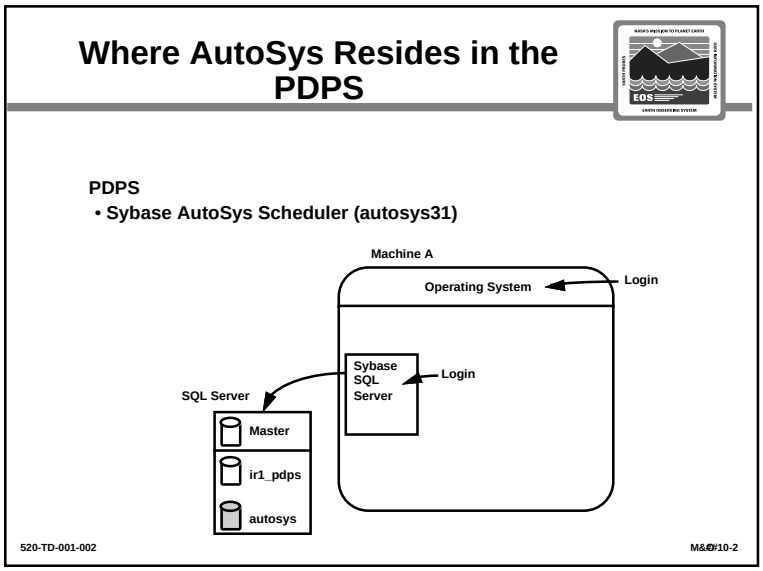


Discussion Topics

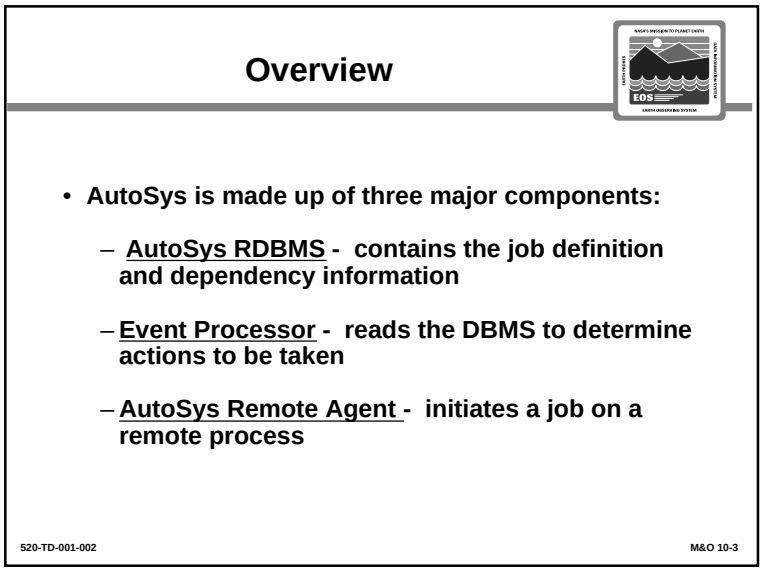
- Objectives of this section:
  - Describe the workings of the AutoSys and its incorporation into the PDPS
  - Perform AutoSys operating functions
  - Perform AutoSys maintenance and troubleshooting functions



Discussion Topics

The Planning and Data Processing Subsystem utilizes two Sybase databases which reside on the Database Server computer. One database is used by the AutoSys scheduler product; the other database is the PGE database used by custom applications. Both databases are managed by a single Sybase SQL Server. A Sybase SQL Server is a set of one or more cooperating processes that manage one or more databases and provide database access to multiple users.

The Sybase name for the AutoSys database is **autosys31**; the name of the PGE database is **ir1_pdps**.

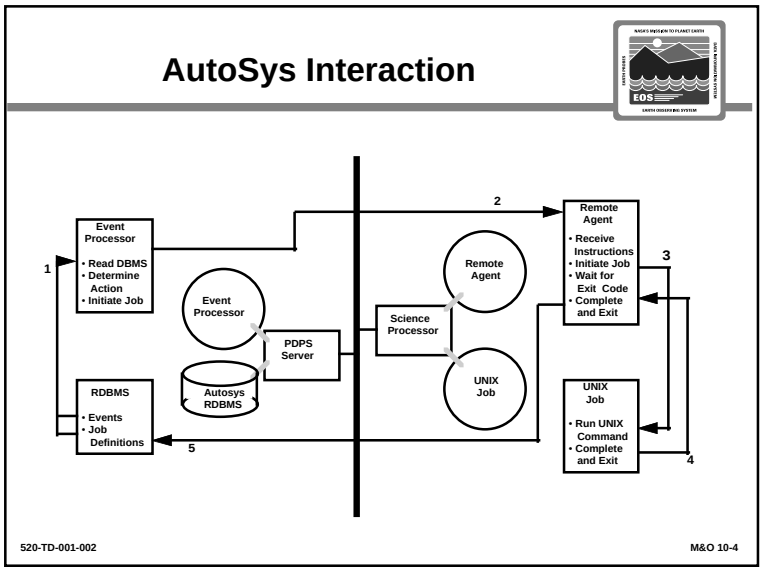


Discussion Topics

AutoSys is used to monitor and schedule the execution of one or more Science Software executables (also called Product Generation Executables or PGEs) in support of the integration and test of science software. AutoSys has three primary components:

- The Sybase **AutoSys RDBMS** is the data repository for all system events, and for all job, monitor, and report definitions. The database is used to store PGE registration information, data processing request information and the Sybase server. It needs to be up and running at all times in order for the PDPS to execute.
- The **Event Processor** is a UNIX demon process that schedules and starts jobs based on information contained in the AutoSys RDBMS. It also needs to be up and running at all times in order for the PDPS to function properly.
- The **Remote Agent** is a temporary process started by the Event Processor in order to perform a specific task on a remote machine. The Remote Agent is executed by the request of the Event Processor based on the machine name information stored in the AutoSys RDBMS.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 1-3 &1-4*



Discussion Topics

AutoSys Interaction

1. The Event Processor reads a new event from the RDBMS when its start time has arrived. It reads the job definition from the database and determines what action to take.

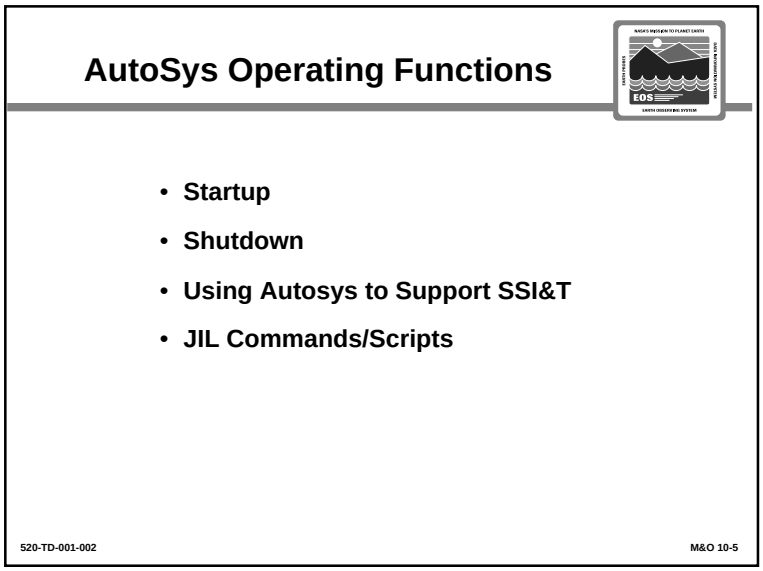
2. The Event Processor sends instructions to the Remote Agent at the Science Processor. As soon as the Remote Agent receives the instructions, the connection between the two processes is dropped. The Remote Agent will continue to execute the job, even if the Event Processor goes down.

3. The Remote Agent performs resource checks, such as ensuring that the minimum number of processes is available. It then initiates a UNIX command job.

4. The UNIX command completes and exits. The Remote Agent receives the exit code.

5. The Remote Agent sends the event completion data (exit code, status, etc.) to the RDBMS. If the database is unavailable, the Remote Agent goes into a wait/resend cycle until the message is delivered.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 1-5 &1-6*

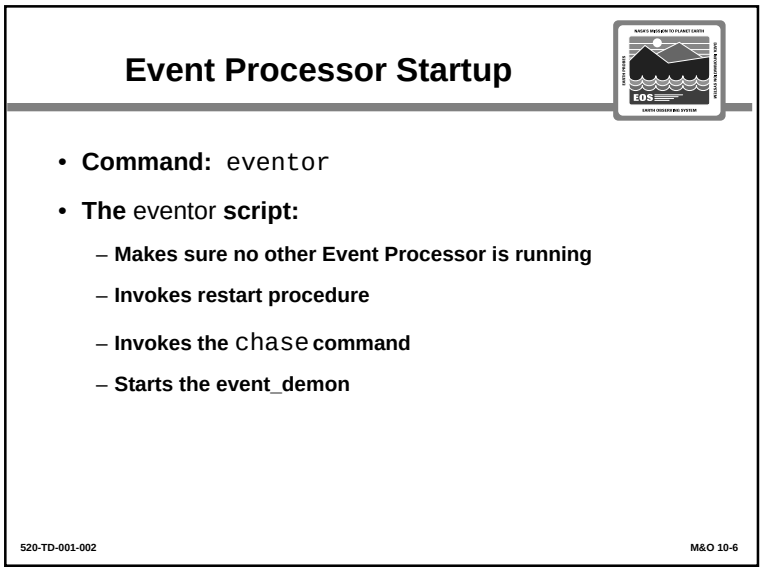


Discussion Topics

The rest of this lesson will cover the following AutoSys operations:

- Startup
- Shutdown
- AutoSys in support of SSI&T
- Job Information Language (JIL) commands/scripts

Troubleshooting will also be covered



Discussion Topics

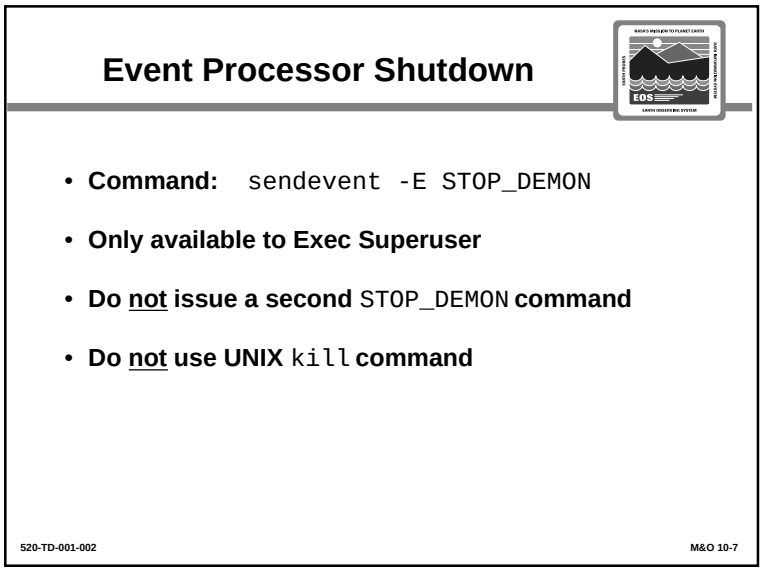
AutoSys startup occurs automatically during the bootup of the SSI&T Server. During the boot process, the "eventor" command is issued, which invokes the AutoSys eventor script.

The eventor script:

- Makes sure that no other Event Processor is running on that machine.
- Invokes a restart procedure that looks for any events that are hung in a "processing" state. Usually there will only be a hung event if the Event Processor was stopped while it was processing an event. If there is a hung event, it will be re-queued for processing.
- Invokes the "**chase" command**, which **inspects the RDBMS to determine what Autosys thinks is running**. It then **checks each machine to confirm that those jobs are in fact running**. "chase" sends an alarm for any missing jobs and, if possible, generates a restart event for any missing jobs.
- Starts the executable event_demon.

The "eventor" command can be issued from the UNIX prompt if there is a need to startup AutoSys independent from the normal boot process. Chapter 2 of the AutoSys User Manual contains additional details on starting and monitoring the Event Processor.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 2-3 &2-4*



Discussion Topics

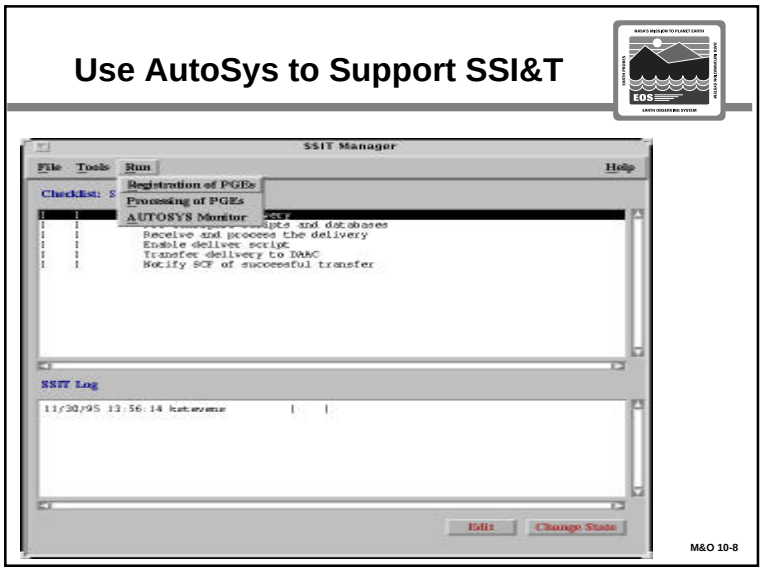
- You can stop the Event Processor safely at any time by issuing the command

  % sendevent -E STOP_DEMON

  at the UNIX prompt.

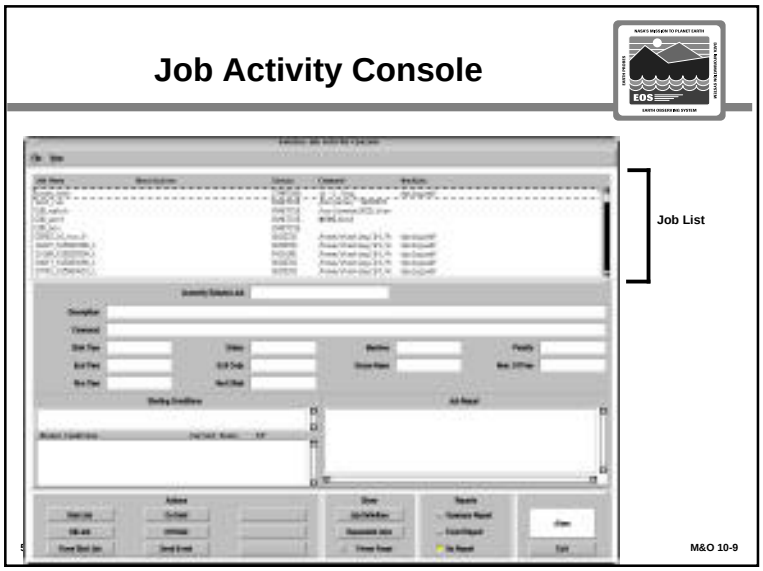
- Only the Exec Superuser (assigned during system installation or execution of the autosecure command) can issue this command.
- Once the command is issued, the STOP_DEMON is sent to the RDBMS, where it is read by the Event Processor. The Event Processor then begins an orderly shutdown. Currently running jobs are not affected. They run to completion and then send their completion status to the RDBMS. Events triggered by the completion of these jobs will not execute until the Event Processor is running again.
- **There may be some delay between sending the command and the completion of the shutdown, but do not issue a second STOP_DEMON command**. If you do, the Event Processor will read it from the RDBMS during the next startup, and will shut back down.
- Also, **never use the UNIX "kill" command to shut down the Event Processor**. This could shut down the processor in the middle of processing an event, **resulting in a hung event when the Event Processor is started up again**.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 2-6 &2-7*



Discussion Topics

- SSI&T Startup: The SSI&T Manager GUI does not automatically appear at system startup. It is started by using the startup script *DpAtMgr startup*.
- The AutoSys Scheduler is obtained by selecting AUTOSYS Monitor under the Run option on the SSI&T Main Menu.
- The AutoSys Scheduler is used to monitor and schedule the execution of one or more Science Software executables in support of the integration and test of science software.

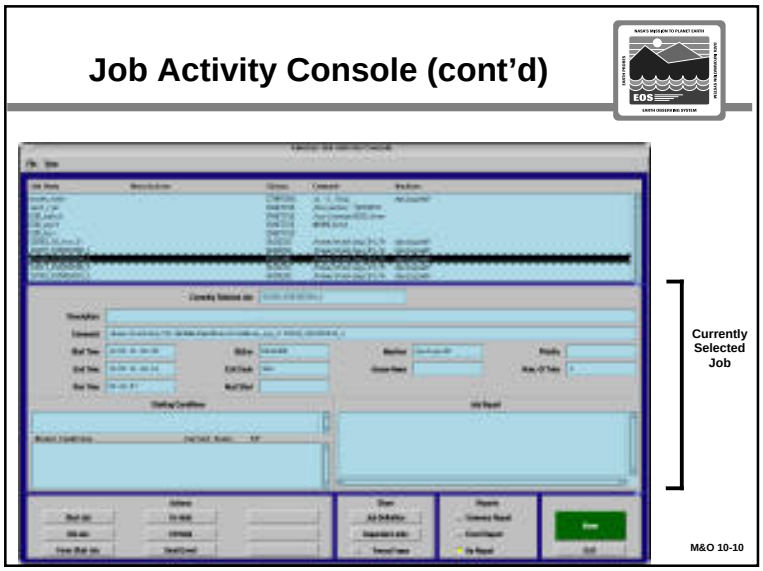


Discussion Topics

The Job Activity Console is divided into three regions: Job List, Currently Selected Job, and Action Area.

- **Job List**. This region displays a list of all the jobs that are defined to AutoSys, subject to the job selection criteria currently in effect. Each entry in the Job List contains the most pertinent information about a single job:
  - Job name
  - Description
  - Current Status
  - Command to be executed (or currently executing command)
  - Machine on which the job is to be run (or currently running)
- If the job is a **File Watcher Job**, the file to watch for appears in the "Command" column; if the job is a Box Job, the "Command" column is left empty. Together, all the entries in the Job List provide a handy snapshot of the entire system, across multiple machines, and at any time
- You can select any job in the Job List by single-clicking on the line on which the job's information displays. When you do this, the selected job becomes the "currently selected" job, and the window displays more detailed information about the job in the Currently Selected Job region.
- The Job List region has its own scroll bar along the right side to scroll down extensive lists. Using the X resources file, you can configure the relative sizes of the columns in the Job List. You can also specify the length of each field, as well as the spacing between fields.

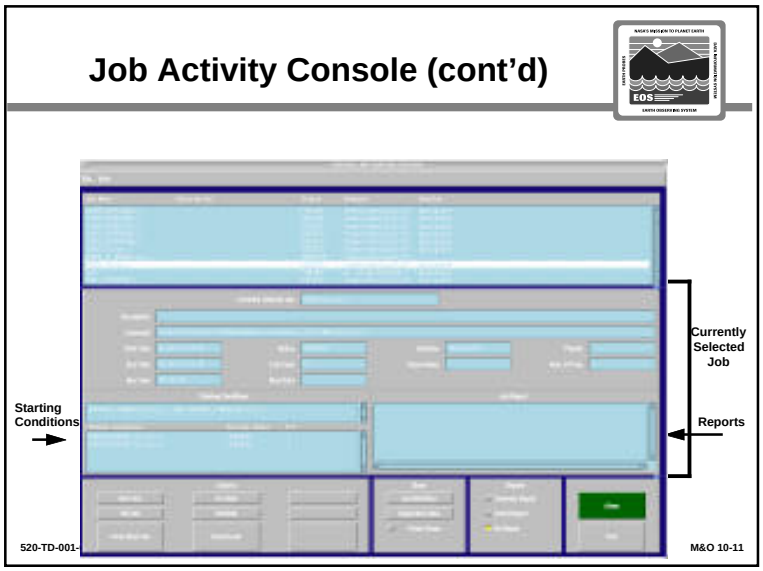
Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-3 &9-4*



Discussion Topics

- **Currently Selected Job**. Displays more detailed information about the currently selected job. All the information that changes with each execution of the job, such as start time and exit code is displayed in this region (it reflects the most recent data about the execution of the job.
- If the currently select job is a File Watcher Job, the "Command" field displays the file for which the job is to watch; if the currently selected job is a Box Job, the "Command" field is left empty.

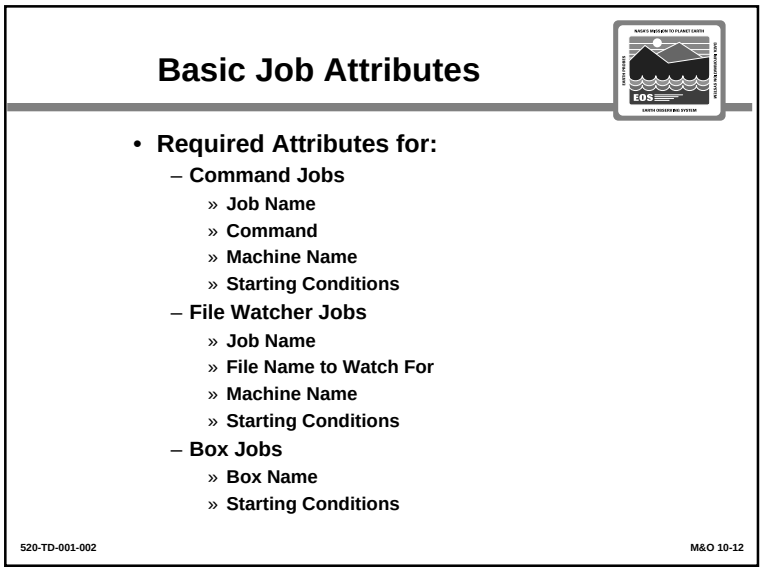
Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-3 - 9-5*



Discussion Topics

- **Starting Conditions**. When troubleshooting, one of the most useful pieces of information found in this region can be a job's starting conditions, found in the Starting Conditions area. This area displays the job's entire starting condition, as specified in its job definition, as well as the **"atomic" conditions -- those conditions which are the most basic components of an overall condition**. In the Starting Conditions area, each atomic condition is displayed with the Current State of the job upon which it is based. Also a "True/False" flag is provided that indicates whether or not that atomic starting condition has been satisfied.
  - If a job has not run within the time frame it was expected to, you would select the job from the Job List and check its starting conditions in order to quickly determine what "upstream" job might be preventing it from running.
  - The atomic condition list is a selectable one; that is by single clicking on any one of the atomic conditions, the job associated with that condition will become the currently selected job, and its details will be displayed in the middle region of the screen. The feature allows you to quickly step through upstream dependencies, checking out each job along that path.
- **Reports**. The reports area displays a real-time report. This report presents job run information in the same format as that produced by the autorep command. you can choose:
  - **Summary Report** - showing the result of the last execution of the job
  - **Event Report** - listing all the events from the last execution of the job
  - **No Report** -
- For either the Summary or Event Report, the report will be run automatically each time the dialog is refreshed (the time interval for this refresh function is user-configurable). **If the Event report is chosen, you can watch a job in real-time, observing the arrival of the various events as they occur, such as the job starting, running, completing, restarting, etc.**

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-3 , 9-5 - 9-6*



Discussion Topics

All job attributes are not required for each of the three job types. Keeping this in mind will make it easier to understand the basic functionality of jobs in AutoSys.

The required job attributes for a **Command Job** are:

- **Job Name -** The unique job identifier by which a job is referenced.
- **Command -** The UNIX shell script, command, or application program to be executed.
- **Machine Name -** The name of the machine on which the command is to be run.
- **Starting Conditions -** The date/time and/or job dependency conditions necessary for the job to be run. (This may not be required, for example, where a job will always be started manually.)

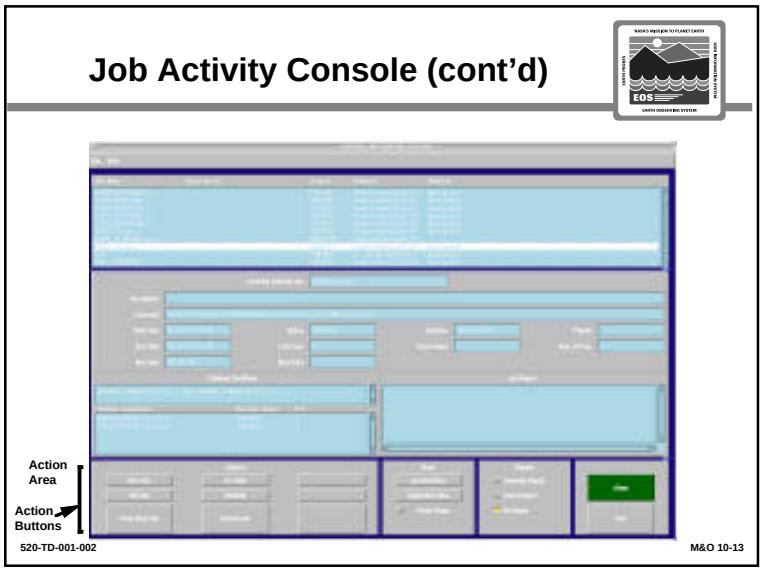
The required attributes for a **File Watcher Job** are:

- **Job Name -** The unique job identifier by which a job is referenced.
- **File Name to Watch For -** The name of the file for which to watch.
- **Machine Name -** The name of the machine on which the command is to be run.
- **Starting Conditions -** The date/time and/or job dependency conditions necessary for the job to be run. (This may not be required, for example, where a job will always be started manually.)

The required attributes for a **Box Job** are:

- **Box Name -** The unique job identifier by which the box is referenced. Used by other jobs as the name of their parent box.
- **Starting Conditions -** The date/time and/or job dependency conditions necessary for the job to be run. (This may not be required, for example, where a job will always be started manually.)

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 3-5 & 3-6*



Discussion Topics

Action Area. Located at the bottom of the window, consists of Action Buttons,

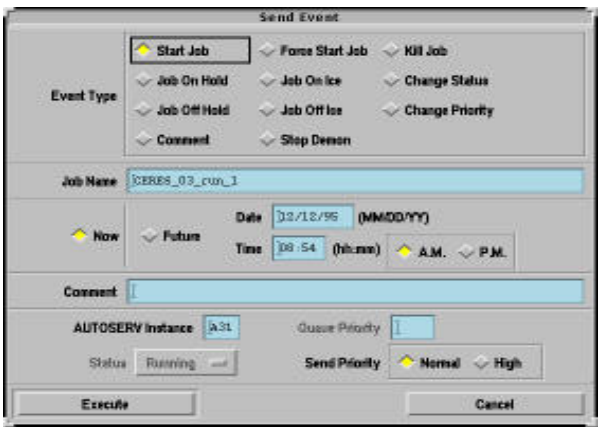
On the left side of this region there are push buttons which can do the following:

- start a job
- kill a job
- force a job to start
- place a job on hold
- take a job off hold

The Send Event button presents more options and allows you to send any type of event. When pressed it displays the Send Event dialog box.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pg. 9-6*

Send Event Dialog Screen



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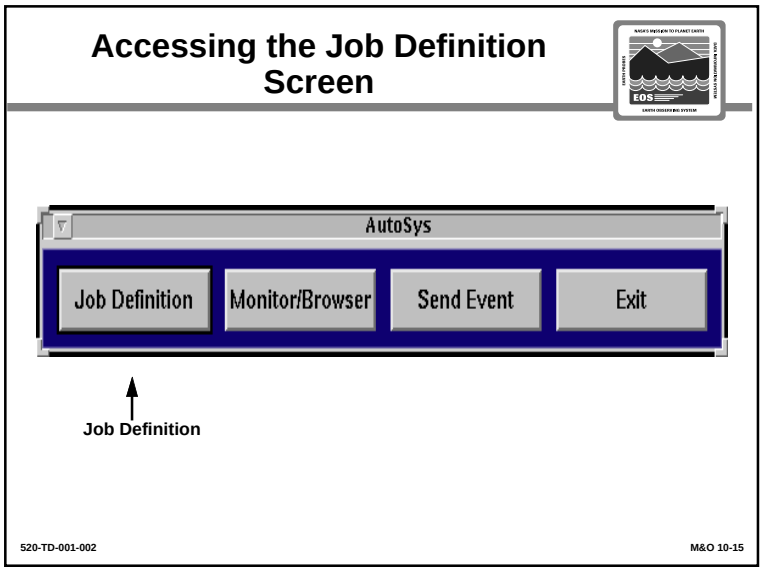
Discussion Topics

Send Event Dialog. Sends any event that can be sent manually in AutoSys. Selects the various event parameters you want to specify when sending the event.

- You send an event using the radio buttons at the top of the dialog. Just below these buttons is the "Job Name" edit box, which by default, contains the name of the currently selected job. You can change this name if desired.
- You can specify when the event is to take effect, either immediately (the default) or at some future time and date.
- The Comment edit box is a free-form field in which you can enter any text you want associated with this event in the database; this field is for documentation purposes only. For example, if you force a job to start, you might provide an explanation about why this was necessary.
- The "AUTOSERV" instance" field will display the current AutoSys server identifier; only when events need to be sent to a different AutoSys instance should this field be changed.
- You can only make an entry in the "Queue Priority" field when the Change Priority radio button has been selected; this affects the run priority of the job.
- In a similar fashion, you can only make a selection from the "Status" option menu if the "Change Status" event type (radio button) has been selected. This menu lets you select a new status for the currently select job.
- You can use the "Send Priority" radio buttons to specify whether the event is to be sent with "normal" priority (the default), placing the event in the queue with all system-generated events, or with "high" priority, placing it at the top of the event queue. The latter is normally reserved for emergencies, such as stopping the Event Processor. (You specify this by selecting the Stop Demon radio button. This is the only event type that's not associated with a specified job name.)
- Use the buttons at the very bottom of the dialog to actually execute, or send the event, or to cancel the event that was about to be sent, by pressing the Execute or Cancel button, respectively. In either case the Send Event dialog is dismissed.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-7 - 9-8*

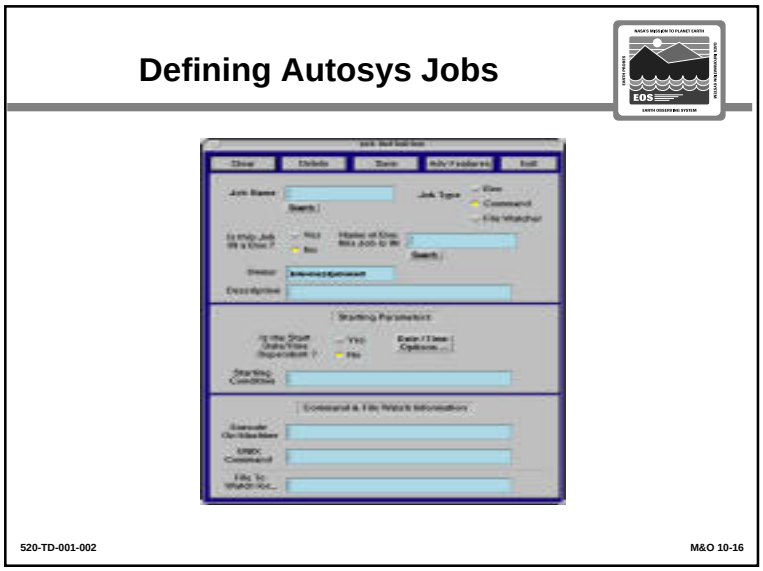


Discussion Topics

The **Job Definition** screen can be accessed from the **Job Activity Console** or from the **GUI Control Panel**, shown here.

- In Ir1, the Job Activity Console is the default screen when you access AutoSys from the SSI&T Manager. There is a button for **Show Job Definition** at the bottom of the screen.
- To access the GUI Control Panel, you enter **autosc &** at the UNIX prompt. You can then click on the Job Definition box to access the Job Definition screen.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pg. 5-2*



Discussion Topics

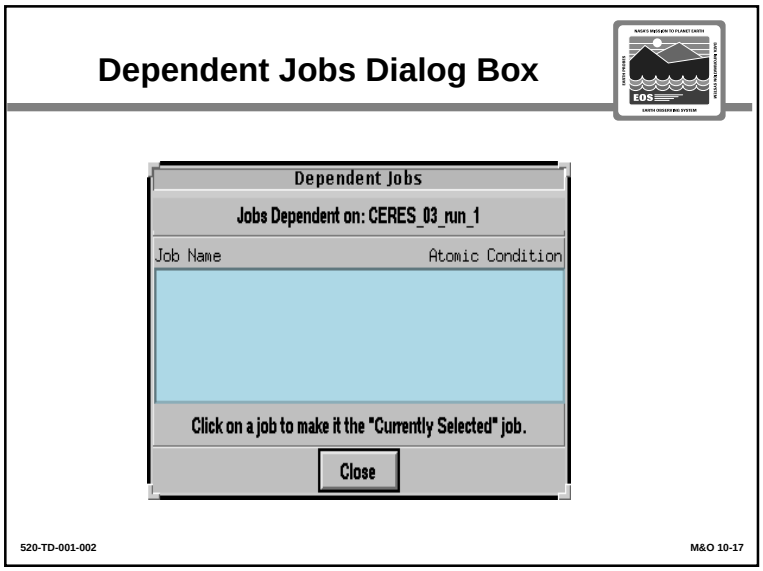
To define an AutoSys job:

- Access the **Job Definition** screen using one of the two available methods.
- Enter the name of the job in the **Job Name** field.
- Select the **Job Type** - Box, Command, or File Watcher.
- If the job is part of a Box Job, select **Yes** and enter the name of the box that contains the job.
- The **Owner** and **Description** entries are optional.
- If the job start is date/time dependent, select **Yes**. You will see a Date/Time Options box that allows you to select the day of the week or calendar day, and the time for the job to start. Close the box by selecting **Dismiss**.
- If the job is dependent on a starting condition, such as completion of another job, enter the **Starting Condition**.
- Enter the name of the machine on which the job is to be run in the **Execute On Machine** field.
- If the job is a Command Job, enter the command or application to be run in the **UNIX Command** field.
- If the job is a File Watcher Job, enter the name of the file to be watched in the **File To Watch for...** field.
- Click on **Save** at the top of the screen to save the job definition.
- Click on **Exit** to close the Job Definition screen,

  or

- begin defining another job by entering a new job name.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 5-3 - 5-4*

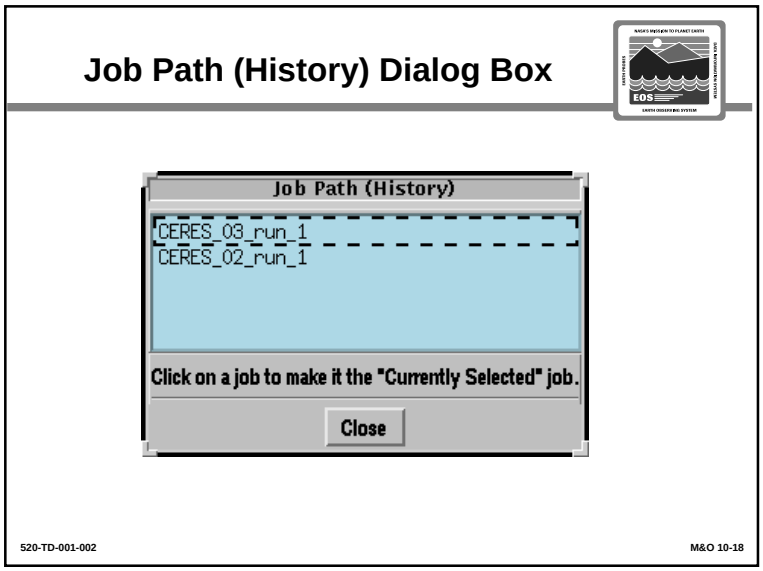


Discussion Topics

Control Buttons. In the middle of the Action Area are pushbuttons that provide you with control functions for the Console screen.

- The **Job Definition** button provides a “hot link” to the **autosc** command; it passes the name of the currently selected job to this command so that the job definition can be immediately displayed, without any further action required. Using this feature, you can quickly review the job’s definition, and change it if necessary (and if permissions allow).
- The **Dependent Jobs** button displays the Dependent Jobs dialog box which contains a list of all the jobs which are directly dependent on the currently selected job. This allows you to quickly see which jobs will be affected by the current job; in particular, which jobs will not run until the current job completes. For example, the current job may be running late for some reason, and you need to determine which other jobs will be impacted.
- The **Freeze Frame** button “freezes” the Console which otherwise is periodically updated, based on the user-configurable update interval. All processing continues normally; the screen just doesn’t get refreshed. This feature is useful when you're viewing the Event Report’s output and the display has scrolled through some of the output. A refresh operation would reset the report display to the first line of output, forcing you to scroll back to the area that you were viewing. When the Freeze Frame button is toggled back on, the Console once again displays the current state of the system.
- The three **Report** buttons let you choose the type of report you want to view as described earlier.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-8- 9-10*



Discussion Topics

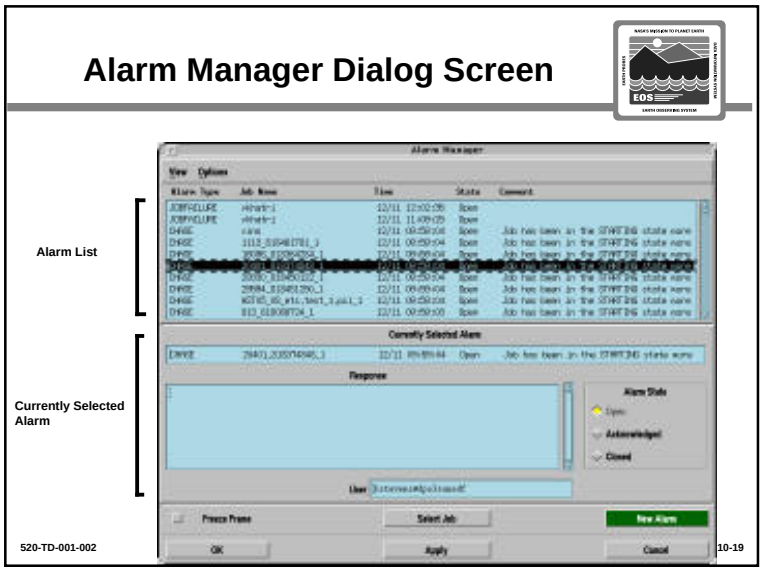
Job Path (History) Dialog. Whenever you single-click on a job in the atomic conditions list or in the dependent jobs list (thereby changing which job is the currently selected one), the Job Path (History) dialog box appears. This dialog box contains a list of all the jobs selected since the last time a job was selected directly from the Job List, in the order in which they were selected.

- Using the Path List in this dialog, you can directly return to any previously selected job by single-clicking on the job's name.
- If any job in the Path List other than the first one is selected, the Job Path dialog remains on the screen, with the just-selected job, and all the jobs following it in the list, being removed.
- If the first job in the list is selected, no jobs will remain in the list, and the dialog is dismissed. Alternatively, you can dismiss the dialog by pressing Close.

The **Alarm button** serves both as an indicator that a new alarm has been detected, and as a way to display the Alarm Manager dialog screen.

- When a new alarm occurs, the Alarm button turns to the color red. When this happens, and you press the button, its color returns to green, and the Alarm Manager dialog is displayed.
- If the Alarm Manager dialog is already on the screen, but it's obscured by the Job Activity Console window, pressing the Alarm button will move the Alarm Manager dialog to the top of the display.
- The Alarm button can also be used to update the Alarm Manager dialog, even if Freeze Frame is in effect.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-10 - 9-11*

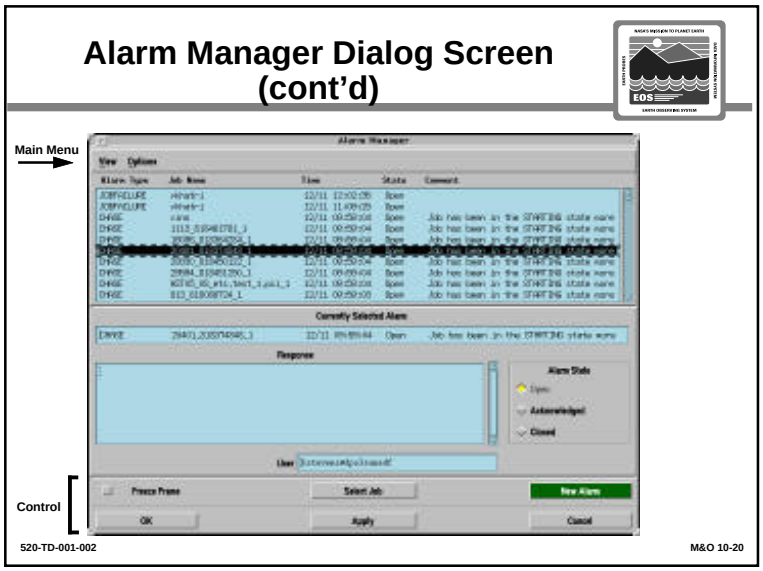


Discussion Topics

Alarm Manager Dialog Screen. The Alarm Manager is divided into three regions: Alarm List, Currently Selected Alarm, and Control.

- **Alarm List** displays a list of alarms which are currently in the system, and that meet the viewing criteria specified by the user, which may include closed alarms. The default is to display all wrapping Open and Acknowledged alarms, of any type, regardless of the time they were generated. Each entry in the Alarm List contains the most pertinent information about a single alarm and are displayed so that the newest alarms appear at the top of the list.
  - – Alarm type
  - – The job for which the alarm was generated
  - – Date and time which the alarm was generated
  - – the Alarms current state
  - – any comment associated with the alarm
- **Currently Selected Alarm.** Displays the currently selected alarm, and lets you enter a response in the “Response” edit box.
  - – The “Response” edit box allows free-form typing and editing.
  - – Changing the alarm state to “Acknowledged” or “Closed” is simply a tracking mechanism; AutoSys doesn’t treat these types of alarms any differently.
  - – The “User” field defaults to the user that is currently logged on, and cannot be overridden.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-18 - 9-19*



Discussion Topics

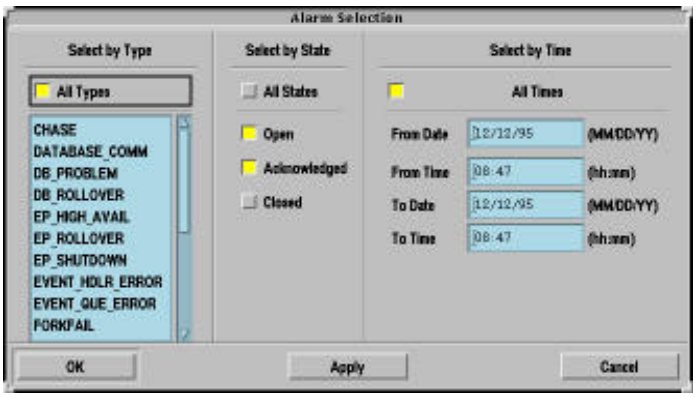
- **Control.** The Control Region of the Alarm Manager allows you to Freeze Frame, Select a Job, or select a New Alarm
  - The **Freeze Frame button** suspends automatic refreshing of the screen, allowing you to work in the Alarm List without it changing
  - The **Select Job button** causes the job associated with the currently selected alarm to become the currently selected job on the Job Activity Console. This is useful when you want to review the details of the job for which the alarm was generated. This operation will also update the Path List (History) dialog in the process.
  - The **New Alarm button** serves the same purpose as the Alarm button on the Job Activity Console. This button turns red when a new alarm arrives, and updates the Alarm List when selected.
- **Registering Responses and Changing Alarm States.** To register a response or change the state of an alarm in the AutoSys Database, you must explicitly save the alarm. To save an alarm to the database:
  - Choose "OK" (this will dismiss the Alarm Manager) or choose "Apply" (won't dismiss)

Alarm Manager Menu Bar contains two menus: View and Options

- **View** menu provides options for selecting the criteria for which alarms are to be displayed
  - The "Select Alarms ..." option will display the Alarm Selection dialog
  - The "Reset to Defaults" option resets the alarm selection criteria to their default settings and updates the alarm Manger dialog to reflect the new selection criteria.
- **Options** menu contains a "Sound On" option which currently can be selected on SunOS systems. It plays back sound clips that are associated with alarms whenever a new alarm is generated. This option can be toggled on and off by clicking on the option.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-20 - 9-22*

Alarm Selection Dialog Screen



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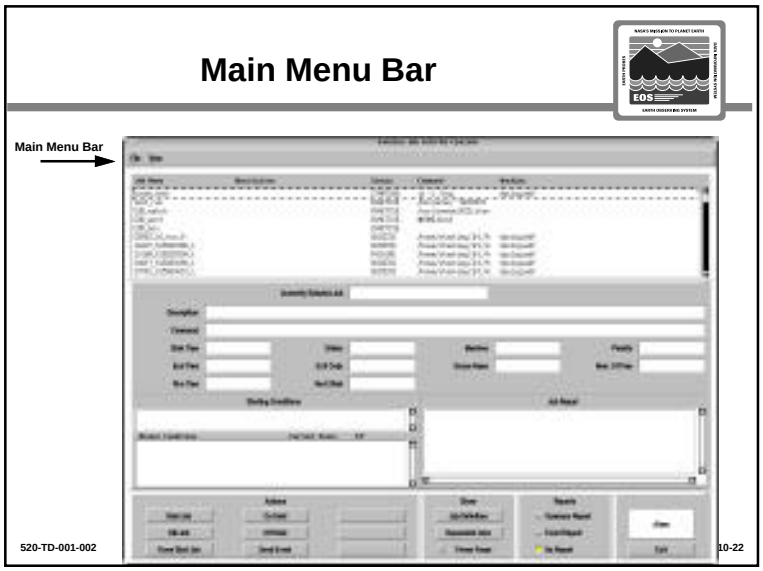
Discussion Topics

The **Alarm Selection Dialog** screen lets you dynamically control which alarms are displayed by type state and by time.

- The “Select by Type” region lists all possible alarm types. You can select one, several or all types of alarms by highlighting what you want.
- The “Select by State” region allows you to select any or all of the states by toggling on the appropriate buttons. The default is to display all Open and Acknowledged alarms.
- “Select by Time” allows you to restrict the alarms that will be displayed by the different times and dates during which they were generated. You can specify a “From Date” and a “From Time”, and/or a “To Date” and a “To Time”. You can specify dates without times; but not times without dates. The current system date and time are provided as defaults.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-22 - 9-24*

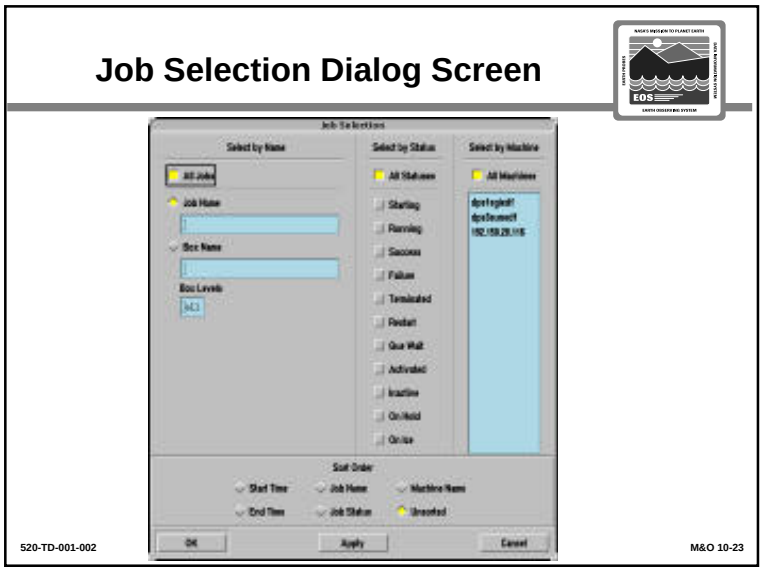


Discussion Topics

Main Menu Bar. Contains two menus: File and View.

- The **File menu** contains one selection “Exit” which functions exactly like the Exit button in the Action Area - it displays a verification dialog asking you if you’re sure you want to exit the Operator Console. If you confirm that you do, the Operator Console is closed, including the Alarm Manager.
- The **View menu** contains a single selection as well, Select Jobs, which displays the Job Selection dialog screen.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-3 & 9-12*

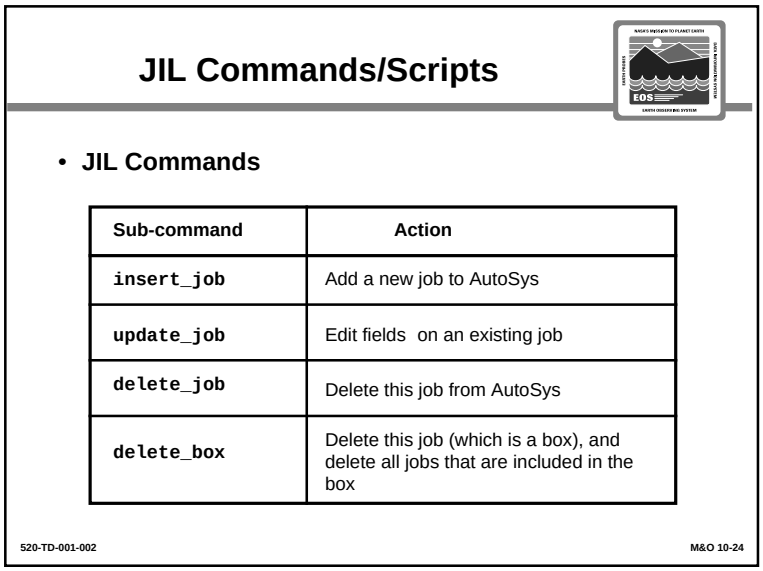


Discussion Topics

The **Job Selection Dialog** screen provides you a way to specify which jobs you want to view, filtering out all other jobs. It lets you specify the jobs you want to view by name, job status, and machine.

- Specifying a job by name. When specifying a job name in the “Job Name field, you can either enter the entire name of a job, or you can enter a partial name with the asterisk (*) wildcard.
- In a similar fashion, you can specify a box name in the “Box Name” field, to select all jobs in the specified box.
- The “Box Levels” field lets you indicate how many levels of nesting you want to view for a Box Job:
  - 0 = specifies that only the top-level box specified in the “Box Name” field is to be displayed.
  - 1 = specifies that the box whose name was entered, and all of its direct descendent boxes and enclosed jobs, are to be displayed. You can enter **any valid positive number**. You can also specify the word **“all”** (the default) to request that all the jobs contained in the box, at any level, should be selected.
  - When selecting jobs based on box name, each level of box/job will be indented to indicate the nesting.
- Specifying Jobs by Status. You can select jobs based on their current status, such as Starting, Running, Inactive, and so forth. The default is to display all currently Running jobs. You can select any combination of the statuses, including “All Statuses”, which overrides any specific status selections.
- Specifying Jobs by Machine. From the Job Selection Dialog you can select jobs based on machine name. On the right side of this dialog, there is a list of all the machines that are referenced in any job or virtual machine definition, or which have run an AutoSys job. From this list you can choose one, several (using the Control key and highlighting), or All Machines (default)
- Sorting Specified Jobs. You can sort by Start Time, End Time, Job Name, Job Status, Machine Name, or in the order in which the jobs were created (Unsorted).

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 9-13 - 9-17*



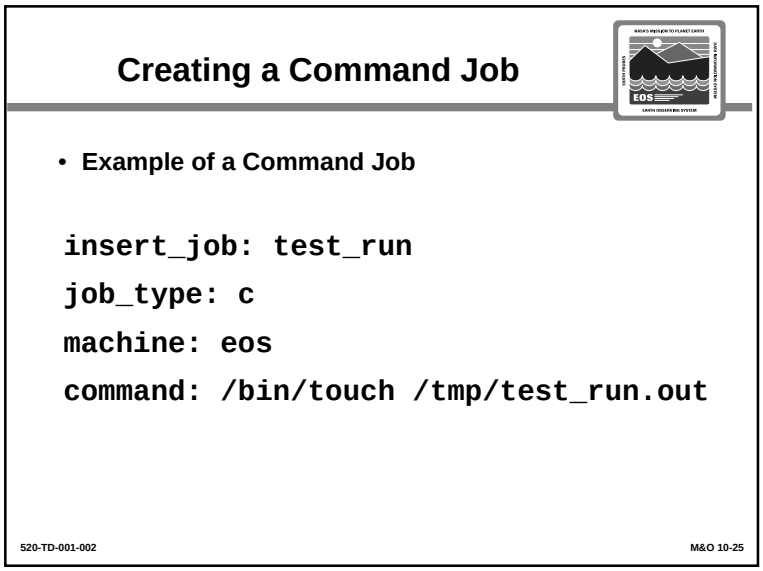
Discussion Topics

The Job Information Language (JIL) provides a way to instruct AutoSys how to execute jobs. JIL scripts contain one or more JIL sub-commands and one or more attribute statements, defining the job to be executed.

- There are four major JIL sub-commands:

insert_job	Allows you to add a new job to AutoSys
update_job	Allows you to change an existing job
delete_job	Allows you to remove an existing job
delete_box	Removes a box job and all of its subordinate jobs

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 15-38, 16-1 - 16-7*

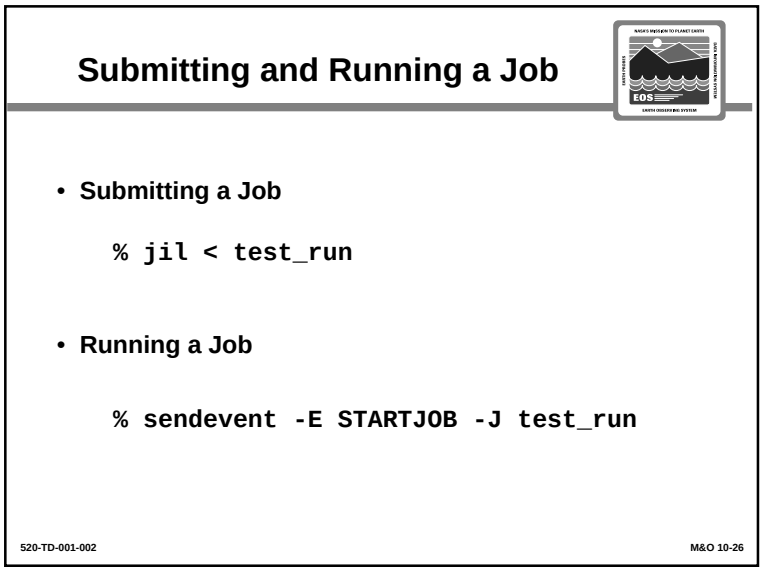


Discussion Topics

Here is an example of a simple JIL command job. This script tells Autosys:

- To add a new job named **test_run**
  - the job name is any user-specified name
- That the new job is a **command** job
  - "c" is the default value, indicating a command job
  - "f" indicates a file watcher job
  - "b" indicates a box job
- To run the job on the target machine named **eos**
  - The target machine can be a specific real machine, a set of real machines, or a virtual machine
- To execute the UNIX **/bin/touch** command on the file named **/temp/test_run.out**
  - The command can be any UNIX command, shell script, or an application program that is to be run on the target machine, when all necessary conditions are met

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pgs. 16-4, 16-41*



Discussion Topics

- Submitting a Job
  - A JIL script must be submitted to the AutoSys Database before the job can be run. This is done by re-directing the ASCII text file containing the definition to the **jil** command. For example, to submit the job test_run, you would enter

    % jil < test_run

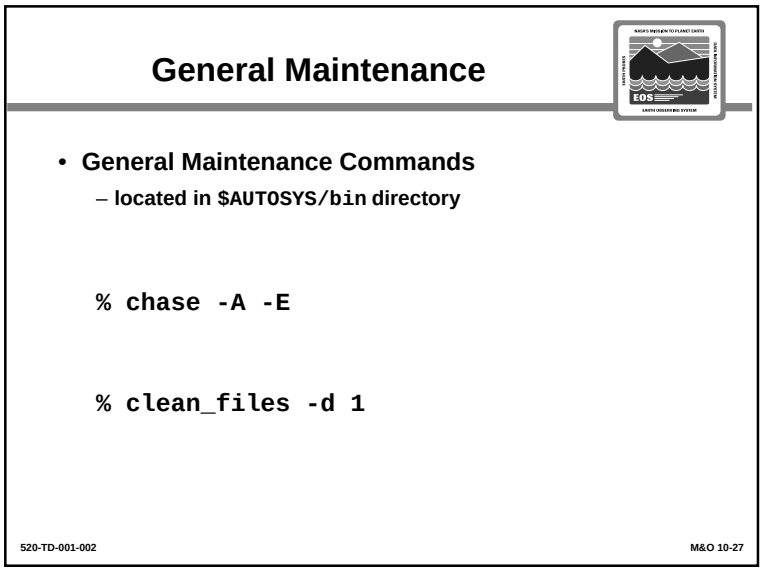
- Running a job
  - If the script contains starting parameters (e.g., start at a given date/time), the Event Processor will automatically run it when the parameters are met.
  - If the script does not contain starting parameters, it will only run in response to the sendevent command. For example:

    % sendevent -E STARTJOB -J test_run

    where -E indicates the type of event (STARTJOB)

    and -J indicates the job name (test_run)

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pg. 15-49*

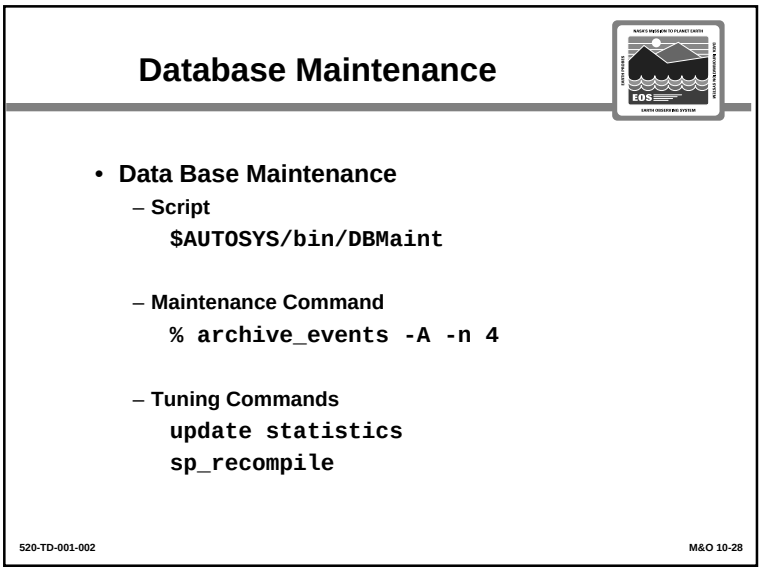


Discussion Topics

General Maintenance commands provide you with the tools you need to ensure that AutoSys is working properly.

- The **chase** command inspects the RDBMS to determine what Autosys thinks is running. It then checks each machine to confirm that those jobs are in fact running.
  - If the **-A** parameter is used, **chase** sends an alarm for any missing jobs.
  - If the **-E** parameter is used, chase will automatically restart any missing jobs.
- The **clean_files** command gets a list of all machines that have had jobs started on them from the AutoSys Database. It then directs the Remote Agent on each machine to remove all AutoSys files older than the specified number of days. In this example, all files greater than one day old would be removed.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pg. 14-2*



Discussion Topics

Once every 24 hours, AutoSys goes into a database maintenance cycle. It does not process any events until this cycle is completed. The time that the maintenance cycle begins can be set using the **DBMaintTime** parameter.

During the maintenance cycle, AutoSys executes the script **$AUTOSYS/BIN/DBMaint**. This script:

- archives and removes old events from the database
- updates the database's execution plans and indexes
- recompiles the stored procedures that use the database tables
- checks the available space in the database

The functions performed by the maintenance script can also be executed individually from the UNIX prompt or in Sybase.

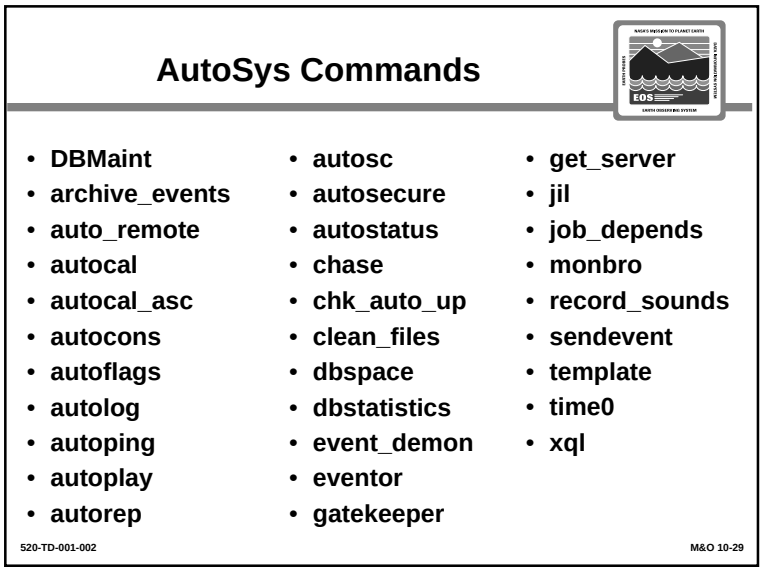
- The **archive_events** command can be used to archive all events older than a specified number of days. It first archives the events in an archive directory, then it deletes these events from the database.

In Sybase, these two commands can be executed. You can also use the **dbstatistics** script to execute them.

- The **update statistics** command can be used to update the indexing statistics for a particular table(s), in order to optimize the performance of the database.
- The **sp_recompile** command is used to recompile the procedures that use the table(s), so that they will be able to utilize the updated index statistics.

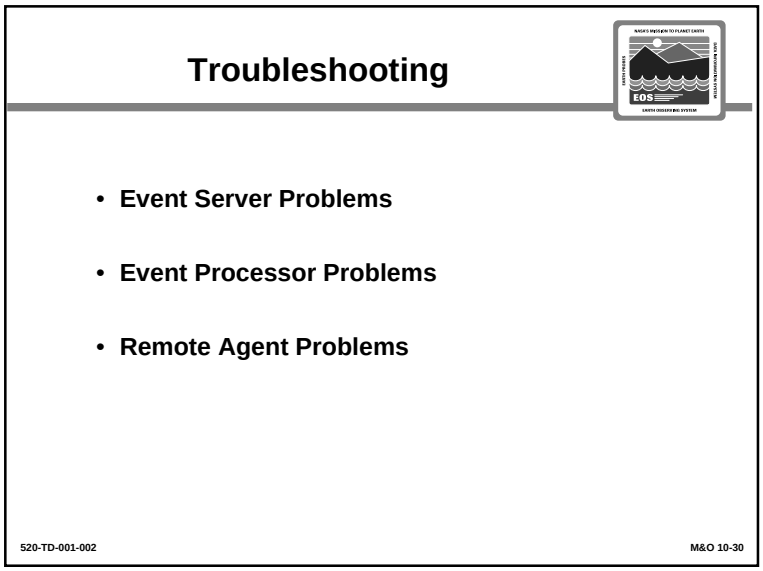
Additional details about database maintenance are contained in Chapter 14 of the AutoSys User Manual.

Reference: *AutoSys User Manual, 3.1, AutoSystems Corp., 1994, pg. 14-3*



Discussion Topics

Commonly used autosys commands -- refer to Chapter 10 of the AutoSys User's Guide for a full description of each.



Discussion Topics

The key to effectively troubleshooting AutoSys problems is in understanding the interactions between AutoSys components in executing a job, which we discussed at the beginning of this lesson. Problems that occur usually involve these interactions, rather than the individual components.

There are a number of resources you can use in isolating and correcting AutoSys problems:

- Chapter 14 of the AutoSys User's Manual contains troubleshooting information on a number of common AutoSys problems involving Event Servers, Event Processors and Remote Agents. For each type problem, it presents a list of symptoms, and diagnostic checks and corrective actions you can perform.
- The Alarm Manager Dialog Screen, which we discussed earlier in this lesson, provides an additional source of information about AutoSys problems.
- AutoSys sends error messages to Event Log Files and to the AutoSys displays. Messages written to Event Log Files are copied automatically to the Event Log Database.
- PDPS sends error messages to the pdps_event.log file (in the local Event Log Directory) and to PDPS displays.
- A script exists to check to see if AutoSys is up and running, called **chk_auto_up**, run from the UNIX command line.